

## REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

### **Status of Claims:**

No claims are currently being cancelled.

Claims 1, 19, 22 and 38 are currently being amended.

Claims 42-57 are currently being added.

This amendment and reply amends and adds claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending and adding the claims as set forth above, claims 1-40 and 42-57 are now pending in this application.

### **Indication of Allowable Subject Matter:**

Applicants appreciate the indication of allowable subject matter made in the Office Action with respect to claims 7 and 28.

### **Claim Rejections – Prior Art:**

In the final Office Action mailed April 10, 2006, claims 1, 3-5 and 8-11 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,770,028 to Maley et al.; claims 1, 3, 6 and 10 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,528,020 to Dai et al.; claims 2, 22-26, 29-32 and 33-37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Maley et al.; claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Dai et al. in view of Maley et al.; claims 1-3, 6, 10, 12-24, 27, 31 and 33-40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,571,401 to Lewis et al. in view of Dai et al.; and claims 25, 26 and 30 were

rejected under 35 U.S.C. § 103(a) as being unpatentable over Lewis et al. in view of Dai et al. and further in view of U.S. Patent No. 6,315,956 to Foulger et al. These rejections are traversed with respect to the presently pending claims under rejection, for at least the reasons given below.

**Dai and Maley:**

Neither Dai nor Maley discloses or suggests that at least one organic group is covalently bonded to conductive modified particles, as now explicitly recited in presently pending independent claims 1, 19, 22 and 38. In this regard, Dai describes the use of nanotubes to make his sensor more sensitive, and detects chemical reactions that cause changes in his nanotubes. No covalent bonding of organic groups to conductive particles is disclosed or suggested by Dai. Maley also describes a sensor which detects changes in a sensor due to chemical reactions of components in the sensor with an analyte. No covalent bonding of organic groups to conductive particles is disclosed or suggested by Maley. Accordingly, independent claims 1, 19, 22 and 38 are not anticipated by Dai or by Maley.

With respect to new independent claims 42 and 50, which recite that “the change in the preexisting resistance is due to a change in the electrical properties across more than one of the conductive modified particles within the layer” (emphasis added), both Dai and Maley are directed to chemical reactions between an analyte and a sensor array that contains conductive particles, in order to change characteristics of each of the conductive particles, and whereby the changed conductive characteristics of the chemically-changed conductive particles is then measured. This operation of a sensor is clearly different from the features of new independent claims 42 and 50, in which the change in the preexisting resistance is due to a change in the electrical properties across more than one of the conductive particles (e.g., due to two adjacent conductive particles being moved further away from each other when the analyte is introduced to the sensor). Accordingly, new independent claims 42 and 50 are not anticipated by Dai or by Maley.

With respect to new dependent claims 43 and 51, those claims recite that the at least one organic group is covalently attached to the particles. Neither Dai nor Maley discloses or suggests a covalent attachment of an organic group to a conductive modified particle.

With respect to new dependent claims 44, 45, 52 and 53, these claims recite features of the at least one organic group, whereby support for that new claim may be found on pages 15 and 16 of the specification. The specific organic groups recited in new claims 44, 45, 52 and 53 are not disclosed or suggested by either Dai or by Maley.

Still further, the specific organic groups (that are attached to the conductive modified particles) recited new dependent claims 48, 49, 56 and 57 are not disclosed or suggested by either Dai or by Maley.

New dependent claims 46 and 54 recite features from the “objected to” claims 7 and 28, and whereby those claims recite allowable features for at least that reason.

With respect to new dependent claims 47 and 55, as discussed above, both Dai and Maley are directed to chemical reactions between an analyte and a sensor array that contains conductive particles, which is clearly different from the present invention that is directed to physical changes in the sensor array and not due to chemical reactions between analytes and conductive particles. New claims 47 and 55 recite that conductivity between the conductive modified particles within the layer changes due primarily to particle-to-particle distance changes between the conductive modified particles within the layer when the analyte is introduced to the sensor, and wherein the preexisting resistance of the layer changes accordingly.

**Lewis:**

With respect to the rejection of the claims based in part on the teachings of Lewis, while Lewis’s sensor array detects changes in physical properties of conductive particles, one of ordinary skill in the art would not be motivated to utilize features of a first sensor array that relies on chemical reactions between an analyte and conductive particles, with features of a second sensor array that relies on physical changes in conductive particles, since those two sensor arrays operate much differently from each other. Accordingly, the purported combination of Lewis and Dai would not be made by one skilled in the art, without hindsight knowledge of the present invention. Contrary to the assertions made in the final Office Action, Dai and Maley are directed to sensors in which chemical changes in conductive particles are measured, and not in which physical changes in the relationship between conductive particles are measured (or occur for that matter). Accordingly, the purported combination of Lewis and Dai (whereby Applicants do not believe that one skilled in the art

would make such a combination in any sense) does not teach or suggest the features recited in new independent claims 42 and 50. Also, neither Lewis, Dai nor Maley, alone or in combination, teaches a covalent bonding of an organic group to a conductive modified particle, as specifically recited in independent claims 1, 19, 22 and 38. It is noted that Foulger does not rectify the above-mentioned deficiencies of the prior art, and thus all of the presently pending claims are patentable over the cited art of record.

**Conclusion:**

Since all of the issues raised in the final Office Action have been addressed in this Amendment and Reply, Applicants believe that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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